the arterial blood and traverses the system of channels known in mammals as the intertubular plexus, is erroneous—the renal afferent vein-blood does not supply the kidney tubules. The renal artery-blood traverses the intertubular plexus proper, and the renal afferent vein-blood a system of wide sinusoids (renal venous meshwork), which has no connection with the intertubular plexus, save that the latter opens into the former where the venous blood flows into the renal efferent veins. In the second place, much experimental and other evidence is provided to prove that the "renal portal" system is devoid of function so far as kidney secretion is concerned. Evidence is also adduced to shew that the urine is solely secreted by the renal tubules, the glomeruli taking no part. The glomeruli (as will be explained in the forthcoming Part iv.) are solely to be regarded as *retia mirabilia* and function as such. This is the tubule-cum-rete theory of kidney secretion.

**Zoological Society,** May 11.—Prof. J. P. Hill, vice-president, in the chair.—Dr. W. J. **Dakin**: Fauna of Western Australia. III. Further contributions to the study of the Onychophora.—C. **Forster-Cooper**: Chalicotheroidea from Baluchistan.

### PARIS.

**Academy of Sciences,** May 3.—M. Henri Deslandres in the chair.—C. **Moureu** and J. C. **Bongrand**: New researches on carbon sub-nitride. The action of the halogens, haloid acids, and alcohols. Numerous attempts to prepare the compound $\mathrm{CN{-}C{\equiv}C{-}CN}$ in quantity proved unsuccessful, and hence experiments on this substance had to be confined to those requiring little material. The sub-nitride combines with bromine. Hydrobromic acid gives bromobutene dinitrile, $\mathrm{CN{-}CH{=}CBr{-}CN}$, and hydriodic acid furnishes the corresponding iodine compound. Hydrochloric acid acts differently, addition and partial hydrolysis taking place simultaneously, giving chlorobutene nitrile amide,

$$\mathrm{CN{-}CH{=}CCl{-}CONH_2}.$$

Ethyl alcohol forms an addition product, probably ethoxybutene-dinitrile.—J. **Constantin**: The fossil chalk Siphoneæ of Munier-Chalmas.—A. **Blondel**: Best conditions to be fulfilled by long-distance electric cables for energy transmission. Practical solutions.—A. de **Gramont**: The spectrographic detection of metals, especially zinc, in animal organisms. Details of the application of the spectrograph to the detection of zinc in the ash from snake poison.—G. **Julia**: Families of functions of several variables.—B. **Jekhowsky**: Differential equations of the second order verified by Bessel's functions of several variables.—J. Kampe de **Fériet**: The use of generalised differentials for the formation and integration of certain linear differential equations.—MM. **Descolas** and **Prétet**: The macrographic study of the propagation of cooling in the interior of a steel ingot starting from its solidification. The method is based on the appearance of the specimen after etching with dilute sulphuric acid (17 in 5).—D. **Hondros**: The integration of the Laplace equation between two non-concentric spheres.—M. de **Broglie**: The properties of reinforcing screens with respect to X-ray spectra and on a splitting of the $\beta$ line of the K spectrum of tungsten.—G. **Chaudron**: Reversible reactions of water on tungsten and the oxides of tungsten. The constant $K=\frac{p(\mathrm{H_2O})}{p\mathrm{H_2}}$ has been studied at temperatures between 600° C. and 1000° C. The results are given in both numerical and graphical forms.—C. **Zenghelis** and B. **Papaconstantinou**: Colloidal rhodium. Sodium rhodiochloride was reduced in presence of sodium protalbinate by various reducing agents, hydrazine sulphate, hydrogen gas, and formaldehyde, the last of which gave the best preparation. After dialysis and drying in a vacuum, brilliant scales are obtained which are very stable. Solutions have remained unchanged for two years. The crystals contain 33 per cent. of rhodium. Colloidal rhodium absorbs about 2700 times its volume of hydrogen, and from 300 to 1800 times its volume of carbon monoxide, according to the conditions.—O. **Bailly**: The action of neutral methyl and ethyl sulphates on alkaline phosphates in aqueous solution.—J. B. **Senderens** and J. **Aboulenc**: The catalytic decomposition of the fatty acids by carbon. The vapours of the fatty acids, from acetic to isovaleric, give no gas at 460° C. in the absence of a catalyst; but in presence of purified animal charcoal decomposition takes place at 360° to 380° C. The products of the reaction include carbon monoxide and dioxide, unsaturated hydrocarbons, hydrogen and methane, a liquid containing water, and traces of ketones and aldehydes. Sugar carbon is less active as a catalyst, and a much higher temperature is required to effect the decomposition.—P. **Guérin** and A. **Goris**: A new plant containing coumarin, *Melettis melissophyllum*. The presence of coumarin in this labiate has been proved: it probably occurs as a glucoside hydrolysable by emulsin.—Ad. Davy de **Virville**: Note on the comparative geographical distribution of *Primula officinalis, P. grandiflora,* and *P. elatior* in the west of France. *P. grandiflora* grows best in damp, shady spots, whilst *P. officinalis* prefers dry soil and positions exposed to sun; hence, although hybrids of these two species are readily formed, they rarely occur in Nature. In railway cuttings the conditions favourable to each species may occur in close proximity, and hence the hybrid is particularly abundant along railway lines. It is suggested that *P. elatior* may have originated as a hybrid between the two species above-mentioned.—H. **Coupin**: Seedlings which turn green in the dark. The green colouring matter of pine seedlings grown in the absence of light is not identical with that of pine seedlings grown in daylight. The differences are marked in *Pinus sylvestris*, less marked in *P. pinea*, and slight in *P. maritima*.—A. **Mayer**: The mode of action of the poison gases utilised during the war.—J. **Nageotte**: Formation and structure of blood-clots.—H. **Violle**: Milk and hæmolysis. Normal milk does not produce hæmolysis of red blood corpuscles, not even when mixed with 30 per cent. of its volume of water. Any milk producing hæmolysis after this addition of water is abnormal.—M. **Marage**: The limits of debility and pretuberculosis.—P. **Wintrebert**: Medullary conduction in *Scyllorhinus canicula*, and the supposed function of the transitory dorsal giant cells of Rohon-Beard.—M. **Lécaillon**: Eggs intermediate between the summer and winter eggs produced in the cocoon of the silkworm.—L. **Hudelo**, A. **Sartory**, and H. **Montlour**: Eczematoid epidemiomycosis due to a parasite of the genus Endomyces.—F. **Diénert**, F. **Wandenbulke**, and Mlle. M. **Launey**: The action of activated sludges.

## Books Received.

The Social Diseases: Tuberculosis, Syphilis, Alcoholism, Sterility. By Dr. J. Héricourt. Translated, with a final chapter, by B. Miall. Pp. x+246. (London: George Routledge and Sons, Ltd.) 7*s*. 6*d*. net.

Animal and Vegetable Oils, Fats, and Waxes: Their Manufacture Refining, and Analysis, including the Manufacture of Candles, Margarine, and Butter. By Dr. G. Martin. Pp. x+218. (London: Crosby Lockwood and Son.) 12*s*. 6*d*. net.

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Department of Statistics, India. Agricultural Statistics of India, 1917–18. Vol. i. Pp. xvi+321. (Calcutta: Superintendent, Government Printing, India.) 2 rupees.

Geology of the Mid-Continent Oilfields, Kansas, Oklahoma, and North Texas. By Dr. T. O. Bosworth. Pp. xv+314. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 3 dollars.

Chemical Services Committee, 1920, Report. Pp. xii+121. (Simla: Supt., Government Central Press.)

## Diary of Societies.

### *THURSDAY*, May 27.

Royal Institution of Great Britain, at 3.—William Archer: Dreams, with Special Reference to Psycho-Analysis.

Linnean Society (Anniversary Meeting), at 3.

Royal Society, at 4.30.

Concrete Institute (Annual General Meeting, followed by an Ordinary Meeting), at 7.30.—Major H. Best: The Mystery Port, Richborough.

Royal Society of Medicine (Urology Section), at 8.30.—Sir Peter Freyer: Modern Progress in Urinary Surgery.

### *FRIDAY*, May 28.

Royal Society of Medicine (Study of Disease in Children Section) at 4.30.—(Annual General Meeting.)

Physical Society of London, at 5.—Sir W. H. Bragg and Others: Discussion on X-ray Spectra.

Junior Institution of Engineers, at 7.30.—A. Arnold: Two Years as an Engineer in the Grand Fleet.

Royal Society of Medicine (Epidemiology and State Medicine Section) (Annual General Meeting), at 8.30.—Dr. P. Hartley and Prof. C. J. Martin: The Apparent Rate of Disappearence of Diphtheria Bacilli from the Throat after an Attack of the Disease.

Royal Institution of Great Britain, at 9.—Prof. W. L. Bragg: The Packing of Atoms in Crystals.

### *SATURDAY*, May 29.

Royal Institution of Great Britain, at 3.—Dr. J. H. Jeans: The Theory of Relativity (Tyndall Lectures).

### *MONDAY*, May 31.

Royal Society of Arts (Indian Section), at 4.30.—A. Howard: The Improvement of Crop Production in India.

Victoria Institute (at Central Buildings, Westminster), at 4.30.—Rev. S. A. McDowall: The Meaning of the Æsthetic Impulse.

Surveyors' Institution, at 5.—(Annual General Meeting.)

Royal Geographical Society (at Æolian Hall), at 5.30.—(Anniversary Meeting.)

Royal Society of Medicine (Odontology Section) (Annual General Meeting), at 8.—C. A. Clark: Relation of Teeth to the Floor of the Antrum.

### *TUESDAY*, June 1.

Institution of Gas Engineers (at Institution of Mechanical Engineers), at 10.30 a.m.—Sir Dugald Clerk: Presidential Address.—Report of Refractory Materials Research Committee: (*a*) The Casting of Gas Retorts; (*b*) Some Comparative Tests of Machine-made and Hand-made Silica Bricks; (*c*) The Specific Heats of Refractory Materials at High Temperatures.—Report of the Life of Gas Meters Research Committee: The Internal Corrosion of Mains, Services, and Meters.—Dr. S. F. Dufton and Prof. J. W. Cobb: Report of Institution Gas Research Fellowship: Some High Temperature Reactions of Toluene and Benzene.

Royal Horticultural Society (at Royal Gardens, Chelsea), at 3.—Dr. E. J. Russell: Some Modern Aspects of Manuring.

Royal Institution of Great Britain, at 3.—Major C. E. Inglis: The Evolution of Large Bridge Construction.

Zoological Society of London, at 5.30.—Dr. G. M. Vevers: Report on the Entozoa Collected from Animals which Died in the Gardens during the Past Nine Months.—Prof. R. T. Leiper: Exhibition: Experimental Transmission of Some Helminth Infections.—Dr. W. T. Calman: Notes on Marine Wood-boring Animals, 1. The Shipworms (Teredinidæ).—Dr. P. Chalmers Mitchell: Notes on an African Trip, with Lantern Illustrations.

Royal Photographic Society of Great Britain (Technical Meeting), at 7.—C. P. Crowther: Japanese *Mélange*, including Photographs and Examples of Japanese Crafts.

Royal Anthropological Institute, at 8.15.—Dr. B. Malinowski: The Economic Pursuits of the Trobriand Islands.

Röntgen Society (at Medical Society of London), at 8.15.—(Annual General Meeting.)

Royal Society of Medicine (Psychiatry Section) (Annual General Meeting), at 8.30.—Dr. D. Forsyth: The Psycho-Analysis of a Case of Early Paranoid Dementia.

### *WEDNESDAY*, June 2.

Institution of Gas Engineers (at Institution of Mechanical Engineers), at 10 a.m.—Third Report of the Gas Investigation Committee.

Royal Horticultural Society (at Royal Gardens, Chelsea), at 3.—Dr. A. B. Rendle: Plants of Interest in the Exhibition.

Society of Public Analysts and other Analytical Chemists (at Chemical Society), at 8.—R. Leitch Morris: Perchlorate Method for Potash.—H. Droop Richmond: Estimation for Nitroglycerine.—E. R. Dovey: Apparatus for Evolution Methods of Analysis: An Improved Form of U-tube.

### *THURSDAY*, June 3.

Institution of Gas Engineers (at Institution of Mechanical Engineers), at 10 a.m.—Society of British Gas Industries: Carbonisation.—H. J. Hodsman and Prof. J. W. Cobb: Oxygen in Gas Production.—J. Fisher; Electricity Supply by Gas Companies.—G. Warburton: Contemplations on the Report of the Fuel Research Board.

Royal Horticultural Society (at Royal Gardens, Chelsea), at 3.—Capt. H. J. Page; Green Manuring—Its Possibilities in Horticulture.

Royal Institution of Great Britain, at 3.—William Archer: Dreams with Special Reference to Psycho-Analysis.

Royal Society, at 4.30.—Sir Ernest Rutherford: The Nuclear Constitution of the Atom (Bakerian Lecture).

Linnean Society of London, at 5.—R. Swainson-Hall: Exhibition of 50 Drawings of the Oil-Palm, *Elaeis guineensis*.—A. Whitehead: Objects Observed near Basra during the War.—Prof. W. J. Dakin: Whaling in the Southern Ocean.—Dr. R. R. Gates: Demonstration of Chromosomes in the Pollen Development of Lettuce.

Chemical Society, at 8.

Royal Society of Medicine (Obstetrics and Gynæcology Section), at 8.—Dr. P. Turner: Traumatic Rupture of the Pedicle of a Sub-Peritoneal Fibroid.—Dr. F. Anderson: A Case of Rupture of the Uterus.—Dr. F. Shaw and Dr. Burrows: Radical Cure of Advanced Carcinoma of the Cervix, made Possible by the Application of Radium.—G. Ley: The Pathology of Ante-Partum Hæmorrhage.

### *FRIDAY*, June 4.

Royal Society of Arts (Indian and Colonial Sections, Joint Meeting), at 4.30.—Prof. Sir John Cadman: The Oil Resources of the British Empire.

Royal Institution of Great Britain, at 9.—Sir Ronald Ross: Science and Poetry.

### *SATURDAY*, June 5.

Royal Institution of Great Britain, at 3.—Dr. J. H. Jeans: The Theory of Quanta.

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